Influences on Food Choices, Postpartum Traditions, and Breastfeeding Among Asian WIC Participants in Oregon

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List of Abbreviations

AAP	American Academy of Pediatrics
CDC	Center for Disease Control and Prevention
DGA	Dietary Guidelines for Americans
HP2020	Healthy People 2020
IBCLC	International Board Certified Lactation Consultant
HMD	The National Academies' Health and Medicine Division
IRB	Institutional Review Board
OHP	Oregon Health Plan
PHI	Protected health information
TANF	Temporary Assistance for Needy Families
TWIST	The WIC Information System Tracker
USDA	United States Department of Agriculture
WIC	Special Supplemental Nutrition Program for Women, Infants, and Children
WHO	World Health Organization

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Abstract

The Special Supplemental Nutrition Program for Women, Infants, and Children (WIC) provides low-income women, infants, and children with nutrition and health screening, breastfeeding support, nutrition education, referrals, and supplemental foods. Although additions to the WIC food package including tofu and brown rice were meant to be more culturally inclusive, it is unclear how these additions are perceived. Furthermore, there is limited information about how the nutrition recommendations given to Asian families overlaps with traditional practices, and whether the connection, or lack thereof, impacts the health of Asian mothers and infants, especially during the postpartum period. Importantly, breastfeeding rates among the Asian WIC population are lower than those of other racial groups receiving WIC services in Oregon, and it is unclear what role WIC may play.

Semi-structured focus groups were conducted at Washington County and Multnomah County WIC agencies in Oregon. Questions asked about the WIC food package, family food preferences, and postpartum practices. Qualitative data collection and analysis were based in grounded theory.

WIC-approved foods had mixed reactions from participants with brown rice being the least favored offering. The majority of women shared cooking responsibilities with partners or parents. The preferences of children were a primary driver of food purchased and served. Most Asian WIC participants are continuing traditional postpartum practices from their native countries, including staying home for 1 to 2 months. Foods considered ideal for postpartum recovery and breast milk production include meat-based soups, pigs' feet, certain herbs, and jujube. The predominant motivation for breastfeeding initiation

and continuation among Asian WIC mothers is the infant health benefits of breastfeeding. Success with breastfeeding is perceived to be dependent on a mother's ability to produce an adequate supply of breast milk.

Asian WIC participants follow traditional advice from relatives but still appreciate education provided by WIC. Some WIC food package offerings may be in conflict with beliefs about healthy postpartum foods for recovery and breastfeeding. Therefore, new food items should be considered for the WIC food packages and education should focus on incorporating current WIC foods into traditional health-enhancing postpartum dishes to encourage and support breastfeeding.

Chapter 1: Specific Aims

The Special Supplemental Nutrition Program for Women, Infants, and Children (WIC) provides low-income women, infants, and children with preventative health services such as nutrition and health screening, breastfeeding support, nutrition education, health referrals, and supplemental foods. In 2016, 3,271 Oregon WIC participants self-identified as Asian, either alone or in combination with another race category. Studies about other low-income race groups have been conducted, but literature on Asians, especially those participating in WIC, is limited. Furthermore, existing research has focused on Asian families living in California, Minnesota, or New York, but there is no research regarding Asians living in the Pacific Northwest region. There is currently limited research investigating how the intersection of traditional Asian health practices with Western health recommendations influences Asian families' decisions about feeding infants and children. One of the core services of WIC is to provide breastfeeding support. However, it is unknown how well these services support the Asian population, especially because the data currently shows that breastfeeding rates are lowest among Asians compared to women of other racial groups. Previous data indicate that Asian mothers are largely influenced by other family members when it comes to making decisions about early infant feeding, and that they believe the food they consume determines the quality of their breast milk. Therefore, understanding the degree of cultural and familial impact on Asians' food choices and breastfeeding decisions may help improve the nutrition education and breastfeeding support provided to the Asian population receiving WIC services. With the growing number of Asian families enrolled in Oregon WIC, it is important to enhance the WIC program so it optimally delivers

nutrition services and supplemental foods that help support the health of Asian mothers and children in Oregon.

This project used focus groups and qualitative analysis to:

1. Explore the compatibility between the WIC food package items and the food preferences of Asian Oregon WIC participants.
2. Identify whether the WIC food package provides food items that Asian Oregon WIC participants consider health-promoting for supporting postpartum recovery.
3. Describe perceptions that Asian Oregon WIC participants have about breastfeeding.
    a. Investigate the role of family members on the decision to breastfeed.
    b. Identify who provides Asian Oregon WIC participants early infant feeding advice.

Ultimately, there is a gap in knowledge regarding Asian WIC participants and how they make decisions about breastfeeding and food choices. This study offers suggestions of how healthcare providers and WIC staff can serve the Asian population with greater cultural humility and responsiveness that align with the cultural beliefs held by Asian Oregon WIC participants regarding food choices and early infant feeding.

Chapter 2: Background

Asians, Acculturation, and Food Choices

The various Asian sub-groups each have diverse cuisines and traditional foods; among these, the most studied are the Chinese, Korean, Vietnamese, and Hmong diets. Several studies indicated that it is difficult for Asian families living in the United States to balance traditional Asian foods and American foods.[1-5] Studies interviewing Asian families illustrate that, to balance the intersection of cultures, some families consume American foods for breakfast and snacks, and traditional Asian foods for lunch or dinner.[1,2] Others eat a more Western-based diet for lunch and only eat more customary foods for dinner.[1,2] A study interviewing 44 Hmong parents from Fresno, CA and Sacramento, CA in 2004 reported that one of the advantages of the American diet was the greater availability of fruits and vegetables compared to the traditional Hmong diet.[2] However, other Asian adults tend to feel that traditional Asian meals are healthier because they have more vegetables than American meals. In a study of 20 Chinese couples who enrolled their children in Chinese schools around the Pittsburg, Philadelphia area, parents shared that they did not completely switch to American diets because they did not like American foods and were only willing to eat them occasionally, even though their children wanted more Western foods.[1] However, because there are many Asian cultures with variable traditions and meal patterns, it is difficult to generalize about all Asian food choices.

Many Asians place an importance on food and health, knowing that food choices can impact health.[3] Furthermore, many Asians recognize that fruit and vegetable intake is part of a healthy diet.[1-3] They also acknowledge that eating out is less healthy than

cooking at home[3] and regard fresh produce and meat as healthier than frozen or canned versions.[2] According to the study on Hmong parents and children in California in 2004, Asian adults, especially immigrants, usually do not use the same terms as Americans to describe nutrition (e.g. they may not use "a serving" as a measure of portion size); however, they are generally aware of healthy eating patterns based on their own hunger and appetite cues.[2] Asian youth in the same study seem to have a better understanding than their parents about American nutrition education, such as MyPlate and portion sizes, from school or the media.[2] This difference in knowledge between parents and youth suggests that age of immigration may play a role in perceptions of food and nutrition.

In general, Asian mothers seem to be the primary decision-makers when it comes to food choices for the family.[1,4] However, many mothers consider their husband and children's preferences, eliminating foods disliked by children and adopting more Western foods if desired by children.[1] Maternal food choices for the family also seem to be influenced by acculturation level, as more acculturated mothers tend to purchase and prepare more Western foods for their families.[4,5] Acculturation refers to the process of making cultural modifications when immigrants move to a new country as they adopt aspects of the new country and replace or alter the traditional practices from their native country.[4] One study interviewing Chinese American children ages 9-13 years in Texas examined acculturation levels and food choices, finding that children's food choices are largely influenced by their parents and that more acculturated children tend to consume more Westernized diets.[6] In a qualitative study conducted with focus groups in 2004, researchers indicated that the greater amount of time lived in the U.S. correlates with poorer nutrition quality and decreased health status for many immigrants,[3] suggesting that

adoption of American culture and diet may be linked to poorer health. Preservation of traditional Asian foods may therefore be advantageous to Asian families.

WIC Food Packages and Asian Food Choices

The WIC food packages are designed by the United States Department of Agriculture (USDA) using the National Academies' Health and Medicine Division (HMD) health recommendations, which are based on the Dietary Guidelines for Americans (DGA). The HMD reviews the WIC food package every 10 years, making changes based on the current prevalence of nutrient deficiencies, food preferences, and other health concerns of the WIC population.[7] The HMD also ensures that the WIC food package supports the most updated recommendations for the DGA.[7] This allows low-income families to use their WIC benefits to purchase what the USDA and HMD consider healthy. The food package includes: whole grains (such as whole wheat pasta, bread, brown rice, or other grains), vegetables (frozen and fresh), milk or soy milk, dried foods, eggs, and cold and hot cereals.[8] In October 2016, Oregon WIC added tofu and yogurt as options to replace a portion of the milk offered in the food package.[8] In order for a grocery store to be WIC-authorized, the store must also accept Supplemental Nutrition Assistance Program (SNAP) benefits and maintain a minimum stock of all WIC products at all times.[9]

Additions to WIC food package offerings, such as brown rice and tofu, were made with the intent to be more culturally inclusive. However, it is unclear whether the current food packages are compatible with Asian food preferences and culturally defined health standards. While further research is needed to determine what exactly is

contributing to associations between acculturation and reduced health, there is evidence that the WIC food package benefits families overall. Changes made to the WIC package in October 2009 in California promoted greater intake of a variety of whole grains, reduced fat milk, and fruits and vegetables, according to a survey collected from 2,996 California WIC participants.[10] However, given that traditional Asian foods are different from American foods and are frequently bought from specialty Asian stores,[5] which are usually not WIC-eligible, there is still the question of whether or not the WIC food package adequately supports the diets of Asian WIC participants. Since WIC serves any qualifying low-income mother and child regardless of immigration status, this question is important to assist those who are less acculturated and primarily prefer to consume traditional Asian foods. There is currently limited research on whether Asian WIC participants feel supported in pursuing what they perceive as a healthy diet through the current WIC food package.

Asian WIC Participants in Oregon

In 2016, WIC served 145,559 Oregon women, infants, and children under five years of age. From data retrieved from The WIC Information System Tracker (TWIST) in January 2017, there were 3,271 participants who self-identified as Asian. Even more specifically, 2,397 (1.6% of the entire Oregon WIC population) identified only as Asian. The primary language spoken by Asians using Oregon WIC is English (n=2,197), although 334 recognized Vietnamese as their primary spoken language and 298 reported Cantonese as their primary spoken language. Of the total Asian WIC participants (n=3,271) in Oregon during January 2017, there were 720 infants (0-12 months). Of these

infants, 304 were breastfeeding and 416 were not. There were 1,854 Asian children between 1-5 years of age and 697 Asian women who were pregnant or lactating.[11] The majority of Asian Oregon WIC participants lived in Multnomah County and Washington County. Table 1 provides enrollment numbers by county WIC offices, hereafter referred to as WIC agencies, and Table 2 provides information about concurrent enrollment in SNAP, Temporary Assistance for Needy Families (TANF), and Medicaid, which is called the Oregon Health Plan (OHP) in Oregon.

Table 1. Number of Asian (Alone or In Combination with Other Race Group) Oregon WIC Participants by County

Oregon WIC Agency	Number of Asian Participants[11]
Multnomah County	1674
Washington County	509
Lane County	184
Benton County	171
Marion County	138
Clackamas County	124
Jackson County	74
Salud WIC Program	65
Douglas County	50
Linn County	49
Deschutes County	39
Klamath County	34
Josephine County	29
Lincoln County	26
U-M County	22
Coos County	21
North Central	11
Union County	11
Columbia County	7
Tillamook County	6
Clatsop County	5
Polk County	5
Baker County	4
Crook County	3
Curry County	3
Harney County	3
Jefferson County	2
Grant County	1
Hood River County	1
Total	**3271**

[11]Oregon WIC Data, 2016

Table 2. Concurrent Enrollment of Asian Oregon WIC Participants in Other Health Assistance Programs

Health Assistance Program	Number of Asian Oregon WIC Participants[11]	Percentage of Asian Oregon WIC Participants
Supplemental Nutrition Assistance Program (SNAP)	1532	46.8%
Temporary Assistance for Needy Families (TANF)	246	7.5%
Oregon Health Plan (OHP)	2760	84.4%

[11]Oregon WIC Data, 2016

U.S. and Oregon Breastfeeding Rates

Both the World Health Organization (WHO) and the American Academy of Pediatrics (AAP) recommend exclusive breastfeeding for newborns for the first six months of life.[12] The Healthy People 2020 (HP2020) public health initiative was developed to improve the health of Americans.[12] With the known benefits of breastfeeding, part of the HP2020 plan aims for 81.9% of all infants born in the United States to start breastfeeding immediately after birth and for 60.6% to maintain exclusive breastfeeding for 6 months.[12] The Center for Disease Control and Prevention (CDC) produces breastfeeding report cards annually to illustrate national and state progress towards the HP2020 goal. Based on this data, the United States as a whole has continued to see breastfeeding rates improve over the last several years. There are 29 states (including Washington, D.C. and Puerto Rico) that have already met the HP2020 target of having 81.9% of infants ever breastfed.[12] In 2016, 92.5% of infants in Oregon initiated breastfeeding and 30.6% were still exclusively breastfed at six months.[12] Oregon currently meets the goal for breastfeeding initiation but not for exclusive breastfeeding to six months. Meanwhile, Asian Oregon WIC participants are not meeting either goal.[13]

WIC and Breastfeeding Support

In accordance with the WHO and AAP recommendations, WIC recommends exclusive breastfeeding for the first six months of life with continuation of breastfeeding and introduction of appropriate first foods thereafter. For non-breastfeeding infants, formula is part of the WIC food package provided each month. The WIC program also provides breastfeeding support for low-income mothers. Aside from advocating for exclusive breastfeeding as the best method of infant feeding, WIC provides breast pumps to help mothers prolong breastfeeding. WIC also staffs International Board Certified Lactation Consultants (IBCLCs) to help guide mothers through breastfeeding challenges and provide support. Often, there are also peer support groups available through WIC agencies.

Asians and Breastfeeding

Asian breastfeeding rates. Despite the limited research on Asians and breastfeeding, there is conflicting evidence between the data that do exist. In 2011, Asian Oregon WIC participants had the lowest breastfeeding initiation rates compared to women of other racial categories in the WIC program (Table 3).[13] These lower breastfeeding rates are also supported by evidence from the study by Wojcicki et al, which indicated that Asian/Pacific Islander women had an increased likelihood of supplementing with formula early compared to Caucasian women.[14] On the other hand, a review completed in 2015 stated that although minority women as a whole had lower breastfeeding initiation and maintenance rates, Asians had a high breastfeeding initiation

rate and are meeting the HP2020 goal for breastfeeding initiation.[15] Ultimately, there is inadequate research on Asians in the United States and their attitudes towards breastfeeding.

Table 3. Oregon WIC Participants' Breastfeeding Rates by Race[13]

Race Category	**Ever Breastfed (%)**	**Breastfed ≥6 months (%)**	**Breastfed ≥12 months (%)**
White, Not Hispanic	91.0	38.7	23.3
Black, Not Hispanic	84.0	31.5	18.7
Hispanic	93.9	49.8	31.7
American Indian/Alaska Native	91.5	47.7	24.4
Asian/Pacific Islander	83.3	34.6	25.8
Multiple Races	91.9	34.8	20.9
Total	91.6	42.1	26.2

[13]Pediatric Nutrition Surveillance Oregon, CDC (2011)

Asian immigrants. Interviews conducted among Asian immigrants suggest that breastfeeding rates are higher in their native country than in the U.S., predominantly for Southeast Asian immigrants.[16,17] Mistry et al interviewed 133 low-income Vietnamese mothers and established that immigrating may change or reduce the resources available to Asian mothers, such as community support, and subsequently decrease breastfeeding rates.[16] This was especially true for those of low socioeconomic status.[16] Another implication of immigration to the U.S. is that infant formula is more readily available, giving mothers an easy alternative to breastfeeding,[16,17] particularly among low income women on WIC who are provided formula on request. Mistry et al also found that 43% of the Vietnamese mothers surveyed stated that if WIC did not supply formula, they would have been more determined to breastfeed longer.[16]

Decision to Breastfeed vs. Formula-feed

Intention to breastfeed. The likelihood that an infant will breastfeed is most accurately determined by the mother's intention to breastfeed before her baby is born.[16,18-20] Even though mothers are frequently the direct decision-makers for infant feeding, qualitative research has indicated that the decisions go beyond individual choice and are shaped by the society in which women live.[18] Women have often heard that breastfeeding is the optimal method to feed infants.[18,19] On the other hand, they have also heard about problems associated with breastfeeding. Fischer et al interviewed 47 white and African American mothers in urban Michigan areas in 2011 and early 2012, and determined that the most common barriers women anticipated with breastfeeding were pain, difficulty with latching, or lack of adequate milk production.[19] Sheehan et al interviewed 37 Australian mothers, finding that some mothers are determined to breastfeed despite the obstacles, while others do not see a way around the difficulties.[4] Some women adapt to this latter perception, changing their definition of "best" to fit their own capabilities; this may mean choosing to supplement or substitute breast milk with formula for its convenience, lack of pain, and reduced stress.[18] Sheehan et al stated that women had a process of "deconstructing best" during which they reasoned with themselves about their decisions to deviate from the clinical recommendation that "breast is best."[18] The study illustrates how women feel conflicted because they know breastfeeding is considered best, but in reality comes with many difficulties.[18] Ultimately, these women sometimes change their plans about breastfeeding to include formula use.[18]

Barriers to Breastfeeding

Many mothers face barriers when it comes to breastfeeding, such as reported pain/discomfort, inconvenience, employment, and embarrassment.[15,19,21] Minority women, especially low-income women, seem to face additional barriers. They often feel a lack of support in the workplace, have language barriers preventing access to breastfeeding support, are more likely to adopt unhealthy lifestyle choices including tobacco or alcohol abuse, and—particularly among immigrants and refugees—feel like they have little control over their lives.[15,16] In one study, returning to work was reported as one of the largest barriers to breastfeeding continuation, especially in lower-income jobs that are not as supportive of breastfeeding.[15] Although the barriers are not easy to overcome, improved support from providers such as WIC or healthcare providers can help guide mothers through breastfeeding challenges.[21]

Asians, Postpartum Traditions, and Influences on Breastfeeding

For Asians, one aspect of the decision-making process about breastfeeding may be related to traditional practices during the postpartum period. In several Asian cultures, it is a traditional practice for women to stay confined at home for a period of time and eat certain foods to help with postpartum recovery.[22-28] For the Chinese, the traditional postpartum practice is called *zuo yuezi* and is based on the "hot and cold" concept related to the yin and yang symbol. The idea is that certain foods, deemed "hot" or "cold", can affect an individual's *qi*, or balance of the physical body and emotional state/spirit of the mind. *Zuo yuezi*, which directly translates to "doing the month", refers to the concept that the month after delivery should be dedicated to the mother's recovery from childbirth by

helping her regain a balanced *qi*.[22-24] Other Asian sub-groups also practice similar postpartum traditions, with the confinement period lasting up to six weeks for Cambodians[27] or 41 days for Vietnamese women.[28] During this time period, it is recommended that mothers remain inside the house, stay in bed as much as possible, and eat certain foods to help re-balance the body and spirit that was disrupted from the pregnancy and childbirth process.[22-24,27] According to these studies, many Asian women believe the 4-6 weeks of postpartum confinement is vital because a woman's body is in a high state of distress during the postpartum period and the imbalance may negatively affect breast milk production.[22-24,27] Though these recovery periods are meant to help the mother prepare for motherhood and help balance the body and the spirit, mothers interviewed in a qualitative study reported that being unable to leave the house made them feel sad.[24] The negative emotional state is believed to reduce the amount of breast milk produced,[24] creating a perceived inability to exclusively breastfeed infants and consequently leading to supplementation with formula. However, a contrasting belief in the Chinese *zuo yuezi* practice is that mothers who feel their *qi* is imbalanced from not adequately following the traditions also feel incapable of breastfeeding.[23]

The food choices an Asian mother makes in the postpartum period can influence both this mind-body balance and her breast milk, according to cultural beliefs. Pregnancy is a "hot" state requiring consumption of "cold" foods to maintain proper spiritual balance; after birth of the infant, "hot" foods are required for recovery and good breast milk production.[22-28] Examples of "hot" foods for the Chinese have been noted as meat, eggs, ginger, and wine.[28] Consuming certain foods are also associated with breast milk production; in a 2016 review of qualitative studies on the topic of postpartum practices in

low income countries including rural China and Southeast countries, researchers stated that in Vietnam, pig nails with green papaya or red bean and potato were recognized as food good for stimulating breast milk.[28] Galvin et al completed an interventional study including 24 Cambodian women at a hospital in Massachusetts in 2005, demonstrating that when the hospital foods available to mothers after delivery were not deemed culturally acceptable by Cambodian mothers, they considered their breast milk inappropriate to feed to infants. This ultimately resulted in lower breastfeeding rates compared to non-Cambodian mothers who did not hold this belief. After the hospital provided a culturally acceptable diet, Cambodian and non-Cambodian mothers were equally likely to breastfeed their infants.[27]

Emotional support. One of the most common barriers to breastfeeding is feeling a lack of support, a feeling common among many low-income women.[15,16] Some studies have concluded that when women feel a higher level of social support, they also have an increased likelihood to breastfeed.[15,16] For many Asian women, the support systems come from the infant's father and grandparents.[23,24] The father's opinion and preference about the method of infant feeding is important to mothers and his support through the often stressful process is vital to the mothers' willingness to continue breastfeeding. This is particularly important for mothers who practice *zuo yuezi* or other confinement practices and rely on the father's help to feed and care for the baby, problem-solve, and provide emotional support.[24] Many Asian mothers think that elders, such as the infants' grandparents also hold valuable and influential opinions when it comes to infant feeding decisions.[16,23,24] Mothers often feel that they must "negotiate" with elders about the benefits of breastfeeding and the importance of continuing to pump even after returning

to work.[24] Mistry et al determined that, according to low-income Vietnamese mothers, mothers-in-law play a primary role in the decisions for infant feeding in Vietnam but do not have as much involvement in the decision in the U.S.[16] The decreased participation from an infant's grandmother may be one cause of the lower breastfeeding rates after immigration. Asian mothers tend to turn to other family members for their opinions on breastfeeding and are influenced by the support of those around them.

Although family support seems to be a large factor in the likelihood to breastfeed, doctors and other healthcare providers may have a role in ameliorating the lack of support felt by Asian mothers as well. Providers can help women prepare to breastfeed before the infant is born, including discussion of the intention to breastfeeding, which serves as the best predictor of whether a mother would breastfeed.[16,20] Tenfelde et al conducted a secondary analysis in the Chicago area using data collected from 235 WIC participants between 1999-2003; the study results indicated that entering prenatal care in the first trimester increased the likelihood of breastfeeding initiation and duration.[20] Mistry et al also found that low-income Vietnamese mothers were most likely to follow the advice they were given by their healthcare provider during the pregnancy or at the time of delivery,[16] though the research did not explain how the advice was delivered to mothers. Due to the positive association between intention to breastfeed and higher breastfeeding rates,[16,18,19] it is important for providers to help mothers plan for breastfeeding. Mothers who lack the support from family members may benefit even more strongly from provider support.[16] Tenfelde et al concluded that among women using WIC in Chicago, problems early in the postpartum period can drive the decision for earlier formula supplementation,[20] and may serve as a critical time period for increased support.

WIC and Breastfeeding Decisions

The role that WIC plays in the infant feeding decision-making process is unclear. Although WIC promotes breastfeeding, formula is provided for infants who are not breastfeeding, giving mothers easy access to formula. Studies provide contradicting conclusions about WIC's success in breastfeeding promotion. Wojcicki et al interviewed 363 women who recently delivered a baby in San Francisco hospitals between 2003-2005 and concluded that there was no difference in attitudes towards breastfeeding between WIC participants and educated non-WIC participants in San Francisco.[14] This study acknowledges the success of San Francisco County WIC in addressing infant nutrition with low-income mothers and potentially making progress towards closing the health gap between higher-income families and low-income families,[14] suggesting that WIC could possibly help more mothers decide to breastfeed. Fischer et al interviewed 47 mothers in Michigan, 25 of whom were WIC-eligible, in 2011 and Mistry et al surveyed 133 Vietnamese mothers using Santa Clara County California WIC services in 2006. Both studies demonstrated that WIC participants were aware of breastfeeding benefits but were also more likely than non-WIC mothers to feel that formula is easier and choose this option instead.[16,19] Further, a review about racial and ethnic breastfeeding disparities reports that WIC participation appears to be associated with low breastfeeding initiation and duration.[15] Together, these studies suggest that that WIC plays an ambiguous role in breastfeeding rates, despite significant breastfeeding promotion.

Women's decisions about how to feed their families are shaped by their environment. Asian women in particular are influenced by the foods they consume,

cultural traditions—particularly after childbirth, and the advice they receive from others. As such, more information about whether WIC adequately supports the needs of Asian participants through the food package offerings, nutrition education, and breastfeeding support is required.

Chapter 3: Methods

Study Design

This study was designed to collect qualitative data using a grounded theory approach. A qualitative approach was selected to explore Asian Oregon WIC participants' perspectives, values, decision-making processes and stories about food choices, postpartum practices, and breastfeeding. Grounded theory is a way to gather qualitative data to develop theories that pre-exist in the data. The methodology is designed to generate hypotheses by investigating social processes, though it does not provide evidence to support a hypothesis. Grounded theory was chosen for this study over other qualitative approaches because it generates explanatory theories behind perspectives or decisions. This study explored cultural postpartum foods and traditions of Asian Oregon WIC participants and illustrated influences on a mother's decisions about feeding her infant and her family. Peer-reviewed articles about grounded theory were used to develop focus group questions and provide insight about analysis.[29-33]

Focus groups were conducted using a semi-structured interview guide (Appendix A). This script was developed by brainstorming what questions should be asked to obtain information relevant to the specific aims of the project. An informal practice session was completed on one researcher's family member for understandability of the questions by an Asian immigrant woman. The questions were then revised for improved understanding and enhanced to generate the most discussion among focus group participants without leading responses in a certain direction. Approval for this project was obtained from the State of Oregon Institutional Review Board (IRB 17-17) and the Oregon Health & Science University Institutional Review Board (eIRB STUDY00018462). Funding for

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Participant Recruitment

Research regarding Asian Oregon WIC participants is limited, and while a growing population, this group currently comprises a small percentage of Oregon WIC participants. Before recruitment began, demographic data about Asian WIC participants in Oregon was obtained from TWIST. The data provided information about the number of Asian WIC participants in each county in Oregon and the number of Asian participants who reported English as their primary spoken language. Using this information, the researchers decided to begin recruitment with Multnomah County and Washington County in Oregon. Email requests were sent to each county's WIC supervisor to invite the agency to participate in the study. A copy of the consent form (Appendix B) and a document summarizing the project, inclusion/exclusion criteria, and how to help recruit study participants (Appendix C) were also provided. Once the county's WIC supervisor agreed to have their clinic participate in the study, focus group dates were scheduled based on clinic and researchers' availabilities and added to TWIST.

Mothers who identified as Asian were recruited from Multnomah County and Washington County in Oregon. In this study, Asian was defined as "a person having origins in any of the original peoples of the Far East, Southeast Asia, or the Indian subcontinent."[34] The inclusion criteria for the mothers were as follows:

1. Age 18 years or older
2. Mother and/or child were current Oregon WIC participant(s)
3. Was a WIC participant for at least 1 month during pregnancy
4. Had given birth to at least 1 child
5. Self-identified as Asian: of descent from any Asian country (includes Far East, Southeast Asia, and Indian subcontinent)
6. Possessed sufficient English fluency to participate in a focus group

Recruitment began in September 2017. The Multnomah and Washington County WIC agencies recruited participants by posting a flyer (Appendix D) about the study at the front desk. Both Multnomah County and Washington County agency staff also asked any eligible participant coming to WIC for a regularly scheduled appointment, class, or other service if they were interested in participating in the study. In Washington County, this occurred for one month prior to the scheduled focus group. In Multnomah County, additional recruitment methods were utilized. One researcher helped recruit participants in person when eligible participants came to the agency for a scheduled visit and by contacting eligible participants via telephone. Data was also pulled from TWIST identifying eligible participants and their scheduled appointments. This information was used to notify Multnomah County WIC agency staff when eligible participants were visiting the clinic and served as a reminder to recruit for the study. Multnomah County also posted information on their Facebook page about the study, inviting Asian WIC participants to attend the focus groups.

Recruitment occurred for at least one month prior to the scheduled focus group. The goal number of participants was 8 to 12 per focus group, as this has been defined as a balanced number of focus group participants to foster rich discussion without overwhelming participants.[35,36] Qualifying mothers who expressed interest in participating in the study to agency staff agreed to be contacted for follow-up. Agency staff kept a list of the WIC identification numbers and names of women who verbalized willingness to participate in the study. Participants on the recruited list were contacted by telephone with a reminder about the focus group the day before the session.

Focus Groups

Through coordination with WIC agencies, the focus groups were held on a weekday in the mid-morning or late afternoon. Each focus group was held for approximately one hour. The first focus group was with WIC participants enrolled in Washington County at the WIC location in Beaverton, Oregon in October 2017. Two focus groups were held in Multnomah County at the Gateway WIC location in Portland, Oregon in January 2018 and March 2018. Preparation for the focus groups included three practice sessions, including one with WIC staff. Consultations with a motivational interviewing expert were held to discuss ways to improve facilitation and help prepare the primary interviewer to lead the focus groups. The researchers did not have any significant relationship to focus group participants.

Prior to the start of the focus groups, snacks and water bottles were made available for participants and their children while participants signed consent forms. The consent form was written in English and provided an overview of the project and

permitted the researchers to record the focus group session and use the information participants shared for analysis. During the focus groups, first names were introduced but last names and other protected health information were not used. Participants were told that they were not obligated to answer questions they were uncomfortable responding to and that they could choose to end their participation at any time without impacting their WIC eligibility. Participants were also assured that during data analysis, their names would not be associated with their comments. Any questions or concerns were addressed by the researchers prior to beginning the focus group.

Focus groups were held using a semi-structured focus group guide. The focus groups were led by one investigator while a second investigator wrote notes and asked clarifying questions as necessary. The sessions were audio recorded to allow researchers to review the discussions at a later time and retrospectively code the participants' responses into categories. The semi-structured focus group script contained 13 open-ended questions with relevant follow-up questions or prompts when necessary. The focus group questions allowed participants to express their personal experiences with food choices, postpartum practices, and breastfeeding. Key topics addressed included: 1) what kinds of meals are made and consumed by Asian families, 2) what kinds of foods Asian mothers consider healthy for their families, 3) what infant feeding plans were considered prior to delivery and what early infant feeding practices actually occurred, 4) what influenced mothers' infant feeding decisions, and 5) who provided advice to mothers about their decisions about food purchases and infant feeding. To reduce bias in the participants' responses, WIC agency staff were not present in the room throughout the focus group sessions.

After each focus group, the participants were given a $15 grocery gift card as compensation for their time. After participants left, the investigators debriefed about the session and discussed strengths, notable quotes, and insight for the next focus group session. Demographic information about each study participant including race, date of birth, number of people per household, primary language spoken in the household, income, and enrollment in SNAP, OHP, or TANF were retrieved from TWIST. This information was collected by researchers to decrease participant burden of completing an additional survey during the focus group session.

Protection of Confidentiality

No one aside from the researchers had access to protected health information (PHI) about the study subjects. Information with PHI remained encrypted and stored in TWIST, a secure database of participant information. No participant information or comments from the focus groups were shared with other participants or anyone outside of the research project. Researchers were trained in protection of PHI and the ethics of human research prior to the start of the project.

Data Analysis

Descriptive statistics were used to summarize demographic information about study participants who completed a focus group session. Each audio recording of focus group sessions was transcribed by one of the researchers. The transcriptions reflect the participants' words without summarizing or paraphrasing any aspect of the conversations. After transcription, the researchers read and used inductive reasoning to analyze the

transcriptions and code the data.[35] Two researchers each read the transcriptions thoroughly, taking note of general statements and ideas shared during the focus group discussions. Analysis of the focus groups centered on common themes from groups rather than individual subjects, such that the unit of analysis was the group and not the individual. A conventional analysis approach was applied as the participants' words were used to create codes. Differences in analysis between the coders was discussed further until an agreement was reached, though in general, the researchers were in agreement about themes and codes. The process reflected values of the participants regarding food choices, breastfeeding decisions, and postpartum practices. It also evaluated the effectiveness of the WIC program in supporting Asian participants through food package offerings and nutrition education. Coding arranged the content of what study participants shared into themes derived from the text. These themes were summarized to describe the overall perceptions of Asian Oregon WIC participants towards breastfeeding, the WIC food package, and postpartum foods and traditions. We were unable to assert that thematic saturation was reached before concluding recruitment due to limitations on time and challenges with recruitment. However, the third focus group did not yield substantially new themes from those identified in the first two groups.

Chapter 4: Results

Fifteen Asian Oregon WIC mothers participated in the focus groups (Table 4). In total, three focus groups were held: one in Washington County and two in Multnomah County, Oregon. The first focus group was held at the Beaverton WIC Clinic in Washington County. Four participants attended, though one ended her participation early to retrieve her daughter from school. The second focus group was held at the Gateway WIC Clinic in Multnomah County, where six participants attended. The third focus group was also held at the Gateway WIC Clinic with five participants. The average age of the study participants was 36 years and the average number of family members was four per household. Approximately half of all focus group participants were concurrently enrolled in SNAP (53.3%). Most were concurrently enrolled in OHP (93.3%). Only one participant was concurrently enrolled in TANF (7%).

Table 4: Characteristics of WIC Focus Group Participants by County

	n[a]	Age (years)[b]	Number in family[b]	SNAP Enrollment	OHP Enrollment	TANF Enrollment
		μ ± SD	μ ± SD	n (%)	n (%)	n (%)
Multnomah	11	37 ± 5	5 ± 1	6 (54.5)	11 (100)	1 (9)
Washington	4	36 ± 8	4 ± 1	2 (50)	3 (75)	0 (0)
Total	15	36 ± 7	4 ± 1	8 (53.3)	14 (93.3)	1 (7)

[a]n = number of participants that attended focus group in that county

During the focus group session in Washington County, most participants spoke English fluently. One participant had her young son interpret some parts of the focus group for her. Two participants in the second focus group, which was held in Multnomah

County, required interpretation of Mandarin Chinese by the primary interviewer. The third focus group was conducted completely in English.

Themes were based on the information collected during the focus groups using a grounded theory approach (Table 5). Themes were divided into three categories: food choices for the family, postpartum practices, and breastfeeding. One overarching theme regarding breastfeeding and food choices is the focus on the child or children. Focus group participants made decisions about breastfeeding for the benefit of the infant and purchased foods at the grocery store based on their children's preferences. They frequently purchased some WIC food package items but not others. Participants received postpartum health advice from family and friends, which included recommendations about consuming certain foods to promote recovery and rules about staying home, not showering, and keeping the head covered for at least one month after delivery of the infant. The primary motivation for following the advice was to prevent negative health consequences, such as headaches, later on.

Theme	Supporting Quotations
Food choices for the family	
Thinking about the children's preferences	"Basically, she likes to eat pretty much anything…She likes to have eggs, fish, meats/chicken, and fruits."*
Sub-theme: Buying what the children want	"Sometimes we buy it if the child they want. But if no want, I no buy." "We don't get [WIC bread or brown rice]. I don't want to get it and then they [kids] don't eat it."
Rice as a staple food	"We're from Thailand, so normally we cook Thai food at home. In the morning, they gonna eat rice and fried egg or sometimes fried rice. Maybe cereal and milk sometimes. And lunch and dinner, they also eat rice." "We usually have noodles, like rice noodles, for breakfast and rice for dinner." "Basically the main one is rice."
Soup is a healthy food	"The best soup is you make it longer and not too much at a time. That bowl of soup will contain a lot of nutrition." "We would make a lot of soup. Um, yeah. We believe the soup is very nutrition." "I like to make soup…That tastes very good and all my kids love it. And sometimes I would cook the veggie soup…That simple soup is also tastes very good."
Postpartum practices	
Staying home after delivery	"She just tell me regular things like, uh, don't go out before one month…The food I follow [my mom's advice] but for the regular activity I couldn't. I just could not stay home for one month. She said don't shower before one week, I just couldn't do it." "In my country also. Two months we do that." "In my country, three months…Before it's very long time, but now it's allowed one month." "You have to cover up and stay home—for a month. But because here it's different, you have do baby checking and go to the cleaner. You have to go outside. But we use the hat to cover the head. Especially the head is very important right? And also, we cannot wash the hair. Cannot wash the hair for a month." "I could leave, because it's different in America…And then for like, if I could avoid—in my culture, it's like for the first two weeks because it's really still new, like the birth, that you're supposed to stay home."

Table 5: Themes and Sub-themes with Supporting Quotations

Sub-theme: Follow traditions to avoid health problems	"But they said the first month is very important. When you take a shower...they say once you are older, your head will hurt a lot! When you are older, your body is tired…So I have a friend. I think she is kind of born here. There is a lot of Chinese people born here. When she has her first baby, she doesn't know how do this, she is not breastfeeding. So she take a shower and eat everything. After like two years, she had headache, something like that. When I told her, she said it's true. So after she get the second baby, she followed something like that and it's better." "It's like, uh, pain for the head. You put like this, and then the headache, it not come."
Specific foods are eaten after delivery	"Jujube. It's called jujube. It's like a fruit that you will make water and boil it to increase your blood after delivery." "Sweet wine, it's black. You can cook the wine with eggs, pigs' feet, and ginger to make a soup. You need to cook it a very long time. It's very healthy and good for you…Cook ginger and black vinegar and pigs' feet with eggs all together to make a soup."* "…We have certain kind of food for the newborn baby or for the mom for the first month. Like the ginger and pork feet. Pork feet. Mix them together, with vinegar. And egg, to make the soup. And I just said like the salty fish and put some pork inside to make you become more milk." "Um, my mom told me to just keep drinking hot water. And then when I cook the soup, put more ginger…to clean the system."
Following advice from friends and family	"I followed their instructions very seriously. I mean they're my parents. We followed a book from Taiwan which is more traditional compared to China mainland." "During the labor, my friends told me don't eat too much rice and meat because when it's hard to concentrate. And when you go to push, it's very hard so don't eat too much rice and eat more vegetable."
Breastfeeding	
Decision to breastfeed is for baby's health	"Because everybody said that breast milk is the perfect one." "I'm still breastfeeding. And I'm planning to do it for one year. Because after one year they say it's more about the bond, not the nutrition. So yeah, just one year." "The first time I don't know. But then my friends and family told me to do breastfeeding is helping them [the infants] be more healthy and more smarter." "I always think breastfeeding is better for the baby. The immune system is better if they're breastfeeding. The baby is much healthier and won't always get sick. So I breastfed them."* "So that's kind of my plan, I want to do it as long as I can. Just because I heard it's so healthy to the baby." "I choose not to do, to breastfeed, because I know I'd end up having the baby sleep with me. And I didn't want them

	attached to me and be so attached that they'd sleep in the same bed as me when they have their crib."
Sub-theme: Breastfeeding can be hard, but moms will do it for the baby	"If I go back to work, I have to pump. It takes half an hour each time to pump and I would feel like it's a waste of time, but for him I feel like I have to do that." "I plan the breastfeeding but it's really a hard time for me, because the latching or lots of things to make you have to wake up for a long time and preparing something. So, and also hurts. Painful. Even though it's hard I still want to do that…Yeah it's a hard time. But many mom wants to do the best to the kids."
Breastfeeding depends on mom's body	"Well, for me, I breastfed her, too. But my milk wasn't enough, so I needed to use formula. I had to give her extra formula because she drank a lot."* "Some people just don't have milk. Like earlier, what I said about my friend. She didn't have a lot and she didn't know why. Her baby always cried. So she had to use formula. She wanted to breastfeed but she couldn't because she didn't have any milk."* "I think a lot of Asian mom want to breastfeed the kids. But many of them will think that the milk is not enough for them…My friends in China will say that if the baby cannot grow up very heavy, they will offer them the formula. Not the breast milk. So that's why they stop it."

*Interpreted from Mandarin Chinese

Food Choices for the Family

Thinking about the children's preferences. Regarding food choices for the family, focus group participants made decisions based on their children's preferences. When asked about a meal that the entire family likes, participants spoke mostly about their children's preferences. Rather than answering with "we" as a family and including themselves, most participants shared their child or children's favorite foods. "Basically, she likes to eat pretty much anything…She likes to have eggs, fish, meats/chicken, and fruits." With the child's preferences in mind, mothers also purchased foods from the grocery store based on what the child wants, saying things like, "We don't get [WIC bread or brown rice]. I don't want to get it and then [the kids] don't eat it." The decisions

over what to buy and what not to buy depend on what the mothers think their children will eat.

When exploring where focus group participants did most of their grocery shopping, many were going to the grocery stores nearest their homes. There was not a significant preference for Asian grocery stores or American grocery stores, but most focus group participants reported going to both types of stores frequently.

Rice as a staple food. Much of the common meals and preferred family meals that the focus group participants talked about included rice as a staple food for many meals. One mother shared that rice was part of all three meals, “In the morning, they [the kids] gonna eat rice and fried egg or sometimes fried rice. Maybe cereal and milk sometimes. And lunch and dinner, they also eat rice.” Similarly, another mother shared that, “We usually have noodles, like rice noodles, for breakfast and rice for dinner.” One summarized, “Basically the main one is rice.” However, rather than using brown rice as a staple, they are buying white rice. As one mother stated, “We know brown rice is very healthy but the kids is not liking it. Because the brown rice is very, very dry. And very hard. Not easy to eat.” Overall, many focus group participants reported that they do not purchase brown rice with WIC benefits, despite their frequent rice consumption.

In regards to other offerings from the WIC food package, some foods were frequently purchased whereas others were rarely purchased as illustrated in Table 7. In general, foods like eggs, milk, meat, vegetables, and pasta were mentioned by most mothers as foods that were often purchased. Foods commonly mentioned as “sometimes purchased” were yogurt, cheese, soy milk, and dried beans. Most focus group participants agreed that they rarely purchased tortillas, brown rice, wheat bread, or canned fish. With

tortillas, one participant reasoned, “I don’t know how to cook this tortillas. So I haven’t bought them.” The participants shared that their children disliked wheat bread, so they did not purchase the wheat breads included in the WIC food package. As for canned fish, the focus group participants prefer fresh fish. “The canned fish we never buy, ‘cause we want the fresh one.” Another participant stated that she does not buy the canned fish because “I always like the fish is still swimming.”

Table 6: Frequency of WIC Foods Purchased by Focus Group Participants

Often	Sometimes	Rarely
Eggs	Yogurt	Tortillas
Milk	Cheese	Brown rice
Vegetables	Soy milk	Wheat bread
Pasta	Dried beans	Canned fish
	Cereal	

Soup is a healthy food. Most focus group participants categorized soup as a healthy food. One described, “We would make a lot of soup. We believe the soup is very nutrition.” The soup that these mothers stated was healthy was generally meat-based rather than vegetable-based, though one mother provided that she occasionally made vegetable soup. “I like to make soup. And sometimes, most of time, I put the lotus, and beans, and meat bones together, and make the soup. That tastes very good and all my kids love it. And sometimes I would cook the veggie soup…That simple soup also tastes very good.” Overall, the focus group participants stated that they and their children enjoy the taste of soup and think soup is nutritious. When examining who primarily did the cooking, many focus group participants shared cooking responsibilities with their partners or other family members.

Postpartum Practices

Staying home after delivery. One major theme was the traditional postpartum practice of staying home for at least one month following delivery of the baby. There were differences in length of time this should be done, with some participants saying mothers in their country should stay home for two or three months. One participant stated that the length of time has changed, "In my country, three months…Before it's very long time, but now it's allowed one month." There were also varying degrees of adherence with staying home among the focus group participants, "She [My mom] just tell me regular things like, uh, don't go out before one month…The food I follow but for the regular activity I couldn't. I just could not stay home for one month." Another participant gave reasoning that the practice might be different in the U.S. "I could leave, because it's different in America…in my culture, it's like for the first two weeks because it's really still new, like the birth, that you're supposed to stay home." Regardless, the participants mostly agreed that some degree of staying home is required.

The focus group participants also discussed other postpartum traditions along with staying home, including keeping the head covered and not showering. "You have to cover up and stay home—for a month…we use the hat to cover the head. Especially the head is very important right? And also, we cannot wash the hair. Cannot wash the hair for a month." However, several participants shared the sentiment that not showering was hard to maintain and that staying home for one month was challenging. One mom put it this way, "She [My mom] said don't shower before one week, I just couldn't do it." A

sub-theme was the motivation to follow these traditions in order to prevent negative health consequences, such as headaches. One participant summarized this well with a cautionary tale about someone she knew who did not follow the traditional practices,

> "But they said the first month is very important. When you take a shower...they say once you are older, your head will hurt a lot! When you are older, your body is tired…So I have a friend. I think she is kind of born here. There is a lot of Chinese people born here. When she has her first baby, she doesn't know how do this, she is not breastfeeding. So she take a shower and eat everything. After like two years, she had headache something like that. When I told her, she said it's true. So after she get the second baby, she followed something like that and it's better."

Specific foods are eaten after delivery. Along with the rules about staying home, keeping the head covered, and not showering, certain foods were mentioned as appropriate for postpartum mothers. Soup was frequently mentioned as a good food to eat after delivering an infant. One stated reason to consume specific foods, particularly a certain type of soup, was to help increase blood volume. "Jujube. It's called jujube. It's like a fruit that you will make water and boil it to increase your blood after delivery." Another reason to eat specific foods is to help produce breast milk. One mom shared, "…We have certain kind of food for the newborn baby or for the mom for the first month. Like the ginger and pork feet. Pork feet. Mix them together, with vinegar. And egg, to make the soup. And I just said like the salty fish and put some pork inside to make

you become more milk." Overall, the recommended foods for after delivery were said to help with recovery and breast milk production.

Following advice from friends and family. The focus group participants shared that WIC taught them about specific things, such as breastfeeding and balancing nutrition for the family. Most also discussed that they received help and advice from their friends and family for traditional practices. Friends and family members provided advice about staying home, but also about foods. Although different participants shared that they had varying levels of adherence to the traditions, one participant shared, "I followed their instructions very seriously. I mean they're my parents. We followed a book from Taiwan which is more traditional compared to China mainland." Even though participants appreciated that WIC provided information, they generally turned to family members or friends for advice on postpartum traditions.

Breastfeeding

Two themes about breastfeeding were identified, with one sub-theme. Most of the focus group participants (92%) initiated breastfeeding for their most recent child (Table 6). Almost half of those who initiated breastfeeding (46%) continued to exclusively breastfeed for at least six months. Only two planned not to breastfeed.

Table 7: Breastfeeding Rates of WIC Focus Group Participants by County

	n[a]	Ever breastfed	Exclusive breastfeeding for ≥6 months[b]	Breastfeeding and formula[c]	Exclusive formula
		n (%)	n (%)	n (%)	n (%)
Multnomah	10[^]	9 (90)	5 (50)	4 (40)	1 (10)
Washington	3[†]	2 (67)	1 (33)	1 (33)	1 (33)
Total	13	11 (85)	6 (46)	5 (38)	2 (15)

[a]n = number of participants that attended focus group in that county (percent)
[^]Missing data for one participant with unborn child who planned to breastfeed "for as long as [she] can"
[†]Missing data for one participant because she left the focus group session early

Decision to breastfeed is for baby's health. A notable theme was that the primary motivation to breastfeed was for the baby. One mother shared, "I always think breastfeeding is better for the baby. The immune system is better if they're breastfeeding. The baby is much healthier and won't always get sick. So I breastfed." Many focus group participants also received advice about breastfeeding and its benefits for the infant from family members and friends. One mother in particular changed her plan for feeding her second infant after learning more about breastfeeding from family members and friends, saying "The first time I don't know. But then my friends and family told me to do breastfeeding is helping [the baby] be more healthy and more smarter." These mothers followed the advice of others, "because everybody said that breast milk is the perfect one." None of the focus group participants mentioned the maternal benefits of breastfeeding as reasons to breastfeed, adding to the theme that breastfeeding decisions were primarily driven by the infant health benefits.

Beyond how breastfeeding is good for the baby's health, the focus group participants did not discuss non-nutritional benefits of breastfeeding. In fact, only two

mothers mentioned a non-nutritional advantage of breastfeeding: bonding between mother and infant. However, one participant disregarded this, saying "I'm still breastfeeding. And I'm planning to do it for one year. Because after one year they say it's more about the bond, not the nutrition." Another mother who chose not to breastfeed shared that the decision was rooted in her desire to prevent a strong attachment between herself and her newborn. "I choose not to do, to breastfeed, because I know I'd end up having the baby sleep with me. And I didn't want them attached to me and be so attached that they'd sleep in the same bed as me when they have their crib." The focus group respondents often discussed the infant health benefits of breastfeeding but did not state that bonding or maternal health benefits were part of their reasoning to breastfeed.

A sub-theme generated from this theme is that breastfeeding comes with difficulties, but the focus group participants were willing to continue because it was good for the infant. Even though breastfeeding can be challenging for the mothers, especially after going back to work or experiencing pain while breastfeeding, they are still motivated to continue breastfeeding as much as they can. One participant stated, "I plan the breastfeeding but it's really a hard time for me, because the latching or lots of things to make you have to wake up for a long time and preparing something. So, and also hurts. Painful. Even though it's hard I still want to do that…Yeah it's a hard time. But many mom wants to do the best to the kids." Similarly, another participant shared, "If I go back to work, I have to pump. It takes half an hour each time to pump and I would feel like it's a waste of time, but for him I feel like I have to do that." This feeling that breastfeeding is necessary for the baby motivated these participants to continue breastfeeding, despite the challenges.

Breastfeeding ability depends on mom's body. When the investigators shared that Asian WIC mothers in Oregon have lower breastfeeding rates compared to other race groups, many focus group participants seemed surprised. One participant explained her surprise by saying, "A lot of my family, they breastfeed. And my friends, my cousins, they all breastfeed. So it's kind of surprising. It's kind of odd, because I know a lot of people who breastfeed." When prompted for possible reasons why the statistic may be true, one theme that reappeared among the focus groups was the belief that the ability to breastfeed depends on the mother's body. Several of the focus group participants believed that some women simply cannot produce enough milk. "Some people just don't have milk. Like earlier, what I said about my friend. She didn't have a lot and she didn't know why. Her baby always cried. So she had to use formula. She wanted to breastfeed but she couldn't because she didn't have any milk." Participants felt that even when mothers want to breastfeed, the perception that the body cannot produce enough milk to nourish the baby can prompt formula supplementation. One mother shared, "Well, for me, I breastfed her too. But my milk wasn't enough, so I needed to use formula. I had to give her extra formula because she drank a lot." The women's perception of lack of milk was based not only on what the baby consumes, but on how the baby grows. If the infant is not gaining weight as quickly as the parents expect, they believe this is because breast milk is not enough and formula is necessary. "I think a lot of Asian mom want to breastfeed the kids. But many of them will think that the milk is not enough for them…My friends in China will say that if the baby cannot grow up very heavy, they will offer them the formula. Not the breast milk. So that's why they stop it." Throughout the anecdotes that focus group participants shared regarding this subject, the desire to

breastfeed was present but the belief that the body cannot produce enough milk for the infant to grow led to formula use.

Chapter 5: Discussion

Summary

Most Asian Oregon WIC participants in this study practiced the traditional period of postpartum confinement, though adherence and duration varied. The participants learned about the traditions from friends and family members and the primary motivation to follow the traditions was to avoid negative health consequences, especially headaches. These results are in congruence with previous studies that Asian mothers obtain support from their family members, particularly when it comes to traditional postpartum practices.[23,24] According to participants, the postpartum traditions included following restrictions on food and eating specific foods for recovery. In previous studies, pregnancy was viewed as a "hot" state, while the postpartum period was a "cold" state requiring the consumption of "hot" foods to restore balance.[22-28] Many of the foods for the postpartum period that study participants discussed were foods identified as "hot" in previous studies, such as eggs, meat-based soups, and ginger.[28] When discussing postpartum practices and foods that promote breast milk production, soup was mentioned several times. In particular, soup made with pigs' feet, ginger, black vinegar, and eggs was consumed by many participants in this study. The study participants considered these foods helpful for both postpartum recovery and breast milk production.

Participants in this study had similar breastfeeding initiation and continuation rates similar to those found in the CDC Pediatric Nutrition Surveillance of Oregon.[13] It is well documented that breastfeeding offers many benefits to both mother and infant. Despite the many maternal benefits, Asian WIC participants primarily made the decision to breastfeed due to the nutritional value of breast milk for the baby. Two participants

shared that the bonding aspect of breastfeeding was not enough reason to breastfeed, and none of the participants discussed maternal benefits as a motivation to breastfeed. As such, study participants seemed to place little to no value on these benefits and were not motivated by the non-nutritional facets of breastfeeding. Several participants reported challenges with breastfeeding common among many mothers, such as pain, difficulty balancing breastfeeding with returning to work, or perceived lack of milk.[15,19,21] However, the Asian Oregon WIC participants in this study were motivated to continue breastfeeding because others, such as friends and family members, have told them that breastfeeding is best for the baby and the mothers want to do what is best for the infant.

Among study participants, the most common reasons to use formula were a mother's difficulties with pumping once she returned to work or her perception that the supply of breast milk was not enough to support optimal infant growth. This belief that breastfeeding success depends on a woman's body and her ability to produce adequate milk aligns with conclusions from previous research that although Asian mothers feel that breast milk may be best for the baby in the beginning, it may not support adequate growth and development in later infancy.[28] Advice about breastfeeding from grandparents of the baby or other family members was a large influence on the initiation and continuation of breastfeeding. This concurs with previous studies indicating that elders in the family can influence mothers when they are making early infant feeding decisions.[16,23] However, even though study participants received advice from friends and family members, they also found education and support from WIC surrounding breastfeeding useful. Previous studies have also demonstrated that healthcare providers can sway mothers' decisions about breastfeeding,[16,20] indicating that mothers consider

advice from different sources as they make plans about infant feeding. Therefore, healthcare providers have an important role in providing support and resources for Asian WIC mothers who want to exclusively breastfeed.

Study participants' food choices for their families were heavily influenced by their children's food preferences. Despite previous research demonstrating that Asian children prefer Western foods while their parents prefer more traditional foods,[1] many Asian Oregon WIC participants who completed this study stated that their children enjoyed traditional foods. However, this difference could be attributed to mothers in this study having children who are younger and not yet of school-age. Thus, they may be less exposed to Western foods consumed by peers if their parents do not prepare Western foods and instead consume mostly traditional foods at home. Many of the focus group participants often purchase certain WIC foods, such as eggs, milk, vegetables, and yogurt, but rarely purchase WIC foods like tortillas, brown rice, wheat bread, and canned fish. The lack of interest in canned fish aligns with results from a previous qualitative study about Hmong Americans who believed canned produce or meat was less healthy than fresh produce or meat.[2] Interestingly, brown rice was added to the Oregon WIC food package in 2016 to be more culturally inclusive, but is not well accepted by Asian participants. Although the Asian mothers in this study described rice as a staple food item in their meals, they mostly purchased white rice because they found the texture of brown rice too difficult for children to eat.

Another frequently mentioned traditional food was soup, which was deemed by participants to be both nutritious and enjoyable. Most of the soup prepared by these mothers was meat-based; since meat is not part of the WIC food package offerings, we

assumed that participants did not support this food preference with their WIC benefits and are able to obtain meat by other means. Also, even though recommended postpartum foods are not all included in the WIC food package offerings, Asian Oregon WIC participants were able to obtain or purchase these ingredients. Some ingredients for postpartum foods, like jujube, may not be as readily available in American stores where participants are able to redeem WIC benefits. Many reported shopping at Asian grocery stores in addition to American grocery stores, though they did not state a preference for one or the other.

Implications and Applications of Research Results

The Asian population is quickly growing in the United States. The U.S. Census Bureau estimates that within 50 years, Asian immigrants will compose 38% of the foreign-born population, the largest percentage of immigrants in the country.[37] The U.S. Census Bureau also projects that by 2065, one in every seven U.S. resident will identify as Asian.[37] Among Asians, there is large socioeconomic diversity, including variations in educational attainment, income, civic participation, naturalization, and acculturation.[37] These differences are often overshadowed by the model minority stereotype, which assumes that all Asian Americans are a homogenous, high-achieving minority group.[37] However, this perception is inaccurate and harmful because it obscures disadvantaged Asian individuals, preventing them from obtaining public services or being included in public policies designed to serve the underserved. The limited research completed on Asians in the United States, especially in regards to cultural health practices, speaks to the invisibility of Asians as a population that does not need additional resources. Thus,

this project serves as a start in identifying ways in which we can better serve the growing Asian population with greater cultural humility.

Results regarding Asian Oregon WIC participants' acceptance of foods in the WIC food package are directly useful for WIC providers. Understanding the reasons why certain foods are accepted and others are less well accepted may help providers address issues with less well accepted foods. Foods in the WIC food package can also be tailored to better support foods deemed healthy and acceptable by the Asian WIC population. For example, knowing that the texture of brown rice is difficult for children to eat, providers can offer methods of preparing the rice that may help increase acceptance among Asian WIC participants. Because Asian Oregon WIC participants follow traditional practices and consume traditional foods, the education that WIC provides should take these traditions into consideration. For example, nutrition education could include ways to incorporate current WIC food package offerings as part of traditional meals and postpartum practices. Furthermore, because the WIC food package follows strict guidelines established by the USDA, the information about low acceptance of certain foods should be considered for the next USDA and HMD review of foods included in the WIC food package.

The results of this project help give healthcare providers information on how to best guide and support the decision-making process for Asian Oregon WIC participants, especially regarding breastfeeding and food choices for the family. In previous studies, a mother's intention to breastfeed was indicated as the most accurate predictor of whether exclusive breastfeeding actually occurred.[16,18-20] Also, much like studies completed in the past, the Asian WIC participants in this study considered the opinions of friends, family,

and healthcare providers when making infant feeding plans.[16,20,23,24] Therefore, it is important for providers to know how to support and encourage Asian mothers' plans to breastfeed to improve breastfeeding initiation and maintenance rates among this group. This study demonstrates that many Asian Oregon WIC mothers are motivated to breastfeed for the infant's benefit and either do not know about or place less value on maternal benefits of breastfeeding. Education focusing on the benefits of breastfeeding for the baby, along with education of maternal benefits, may motivate Asian mothers to initiate and maintain breastfeeding for longer durations.

The decision to initiate and maintain breastfeeding was also largely influenced by the mothers' perceptions of adequate milk supply, which can be influenced by the foods they consume in the postpartum period. Although the foods that are believed to increase breast milk are not part of the WIC food package, acknowledging the use of these foods and supporting mothers' desires to consume these foods may increase breastfeeding rates among Asian Oregon WIC participants. Since perception of inadequate breast milk supply was enough reason to begin formula supplementation among Asian Oregon WIC participants, nutrition education before and after delivery that includes foods believed to increase breast milk in nutrition may help prolong exclusive breastfeeding among this population.

Information regarding the postpartum confinement period for new Asian mothers is useful when considering their follow-up appointments. Participants in this study reported staying at home after giving birth, noting that they only left their homes to attend infant follow-up appointments. Furthermore, although study participants found breastfeeding advice from WIC helpful, the tradition to stay at home for at least one

month may prevent them from making appointments for lactation support. Since issues with breastfeeding early on in the postpartum period has been reported as a high predictor of formula supplementation,[20] Asian women who restrict time outside the home immediately after delivery may not seek lactation support that is helpful for breastfeeding maintenance and subsequently turn to formula supplementation. Therefore, as practitioners work with Asian mothers who follow the postpartum confinement tradition, providers should consider using home visits or telehealth during this period of time. This may help ensure that Asian mothers who believe adherence to postpartum traditions can impact breast milk production are able fulfill the cultural tradition while receiving the necessary follow-up appointments and lactation support.

Study Strengths and Limitations

A strength of this study was that the qualitative design allowed participants to openly share their perspectives and experiences with minimal biases or assumptions introduced by the researchers. Moreover, grounded theory helped provide insight on the decision-making process of study subjects. Though not generalizable to the broad and diverse Asian population or to other WIC participants due to the convenience sample and geographic limitations, the information described herein can be used to generate hypotheses about Asian WIC participants for further investigation. The information described in this study can also inform the development of interventions pertinent to Asian Oregon WIC participants. Finally, because of the limited research conducted with the Asian population previously, especially in the Pacific Northwest region, this project

significantly contributes valuable information to the literature on how to serve Asians with a higher degree of cultural competency.

One of the greatest limitations of the study was the language barrier between the researchers and the participants. Though many study participants reported English as their primary spoken language, others reported a different language as their primary spoken language. All participants were limited in their ability to share experiences and beliefs by their knowledge of and ability to speak the English language. Two focus group sessions required interpretation, either by the primary interviewer or by one participant's young child. The third focus group included participants who may have also benefitted from interpretation, but with the inability to accommodate their preferred language, they communicated in English to the best of their abilities. The inability to accommodate multiple Asian languages and the use of informal interpretation may have hindered a smooth discussion between focus group participants. Moreover, qualitative analysis usually involves coding themes based on the way that stories are shared and the specific words that participants choose to describe their experiences. However, because of the study participants' varying degrees of verbal fluency in English, the diction of these study participants may not have served as a reliable form of analysis in this study since their word choices may be due to vocabulary limitations rather than suggestive of underlying meanings. This inability to speak English fluently and not having anyone in the household above the age of 14 years who speaks English fluently is known as "linguistic isolation," and Asians living in the United States are particularly susceptible.[37] Although these language barriers create a challenge when conducting research among this

population, Asians are evidently a group that includes many sub-groups with diverse needs and experiences which should each be investigated in more depth.

Participant Recruitment

Challenges with the recruitment process occurred at several points throughout the study. The small number of Asian WIC participants in Oregon prompted recruitment to occur only in counties with a relatively higher number of Asian participants. Even so, both Washington County and Multnomah County, the two counties in Oregon with the highest numbers of Asian WIC participants, reported difficulty enrolling participants in the study. Marion County and Benton County, which had relatively moderate numbers of Asian WIC participants, declined participation in this study due to their inability to accommodate focus group recruitment at the time. This limited recruitment to the Portland Metropolitan area.

Focus groups held in Multnomah County required additional recruitment efforts than initially planned. The first focus group scheduled in Multnomah County was postponed twice before a sufficient number of participants was enrolled for a focus group. Researchers intervened on separate occasions by attempting in-person recruitment at the Gateway WIC location and speaking with agency staff about the importance of focus group recruitment to increase enrollment numbers. For the second focus group in Multnomah County, one researcher recruited eligible participants by calling Asian WIC mothers via telephone and asking them to participate in the scheduled focus group. Washington County reported difficulty recruiting for one month prior to the scheduled focus group, and declined participation in recruiting and hosting a second focus group. In

both Multnomah County and Washington County, about half of those enrolled to participate in focus groups attended their focus group session. These efforts and enrollment numbers make evident the difficulty in recruiting Asian Oregon WIC participants for research.

The strength of having smaller focus groups was the more intimate setting for discussion between participants. However, a limitation is that we cannot assert that meaning saturation was reached. The unit of measurement was by group rather than individuals, and the third focus group did not yield significantly new information. This suggests that the achieved number of participants and focus groups may have been adequate for meaning saturation. It is unknown what the primary cause for challenges with recruitment was. Possible reasons may include that Asian Oregon WIC participants are less likely than other racial groups to participate in research or that the sheer low numbers of Asian WIC participants in Oregon limited possibilities for recruitment in focus groups. Nonetheless, future research including this population should consider these challenges when developing study protocols.

Future Research

Future studies related to the topic of traditional Asian postpartum practices should further investigate specific practices among Asian sub-groups. Differences between participants of different national origins were observed in this study, such as the variations in the duration of postpartum confinement. Other differences may contribute to tailoring nutrition education for different Asian sub-groups. Because the label "Asian" encompasses numerous groups, each of which have different health, educational, and

economic disparities,[37] more research based on disaggregated data among Asian groups is necessary. Identifying that the distinct Asian groups have different cultural practices and needs can help healthcare providers deliver more culturally inclusive care to Asian mothers and children.

Also, because this project explored the adherence to postpartum traditions among Asian WIC participants in Oregon, future studies might investigate whether higher adherence makes a significant difference in mothers' postpartum recovery rates or breastfeeding rates. Additionally, although much of the literature surrounding Asian food choices discussed level of acculturation having an influence on food choices, measuring acculturation should be included in future studies. Future studies investigating the impact of adherence to postpartum traditions on breastfeeding may also examine its association with acculturation. Mothers in the current study were motivated to breastfeed because of the benefits to the infant, but further research exploring whether education about maternal health benefits of breastfeeding would give Asian WIC participants additional reasons to breastfeed should be conducted. Finally, because participants in rural areas were not included in this thesis project, future studies investigating the Asian WIC population might include those residing in rural regions of the United States. Overall, research on the Asian population, especially disadvantaged Asian groups that may be concealed by the model minority narrative, should be conducted to improve the resources provided to Asians living in the United States.

Chapter 6: Conclusions

Asian Oregon WIC participants find the nutrition education and breastfeeding support from WIC useful, but also follow traditions and advice from family members and friends. These traditions include confinement and food restrictions for at least one month during the postpartum period, though adherence and duration of these practices may vary between mothers. Providers should inquire about adherence to postpartum confinement when discussing follow-up appointments or lactation support for both mother and infant during this time. Asian Oregon WIC participants believe that eating certain foods during the postpartum period will promote adequate breast milk production. The primary motivation for breastfeeding is knowing that breast milk provides optimal nutrition for the infant. These findings suggest that when helping Asian mothers make early infant feeding plans, emphasizing the positive benefits of breastfeeding for the infant may improve breastfeeding rates among Asian mothers. Providing education about maternal benefits of breastfeeding may provide additional reasons for Asian mothers to breastfeed. Asian Oregon WIC participants believe that postpartum foods and recovery periods help enhance maternal and infant health; therefore, nutrition education and breastfeeding support that includes the perceived health-enhancing foods may help providers improve healthcare with a higher degree of cultural competency for Asian Oregon WIC mothers and infants.

References

1. Lv N, Brown JL. Chinese American Family Food Systems: Impact of Western Influences. *J Nutr Educ Behav.* 2010;42(2):106-114.

2. Pham KL, Harrison GG, Kagawa-Singer M. Perceptions of diet and physical activity among California Hmong adults and youths. *Preventing chronic disease.* 2007;4(4):A93.

3. Harrison GG, Kagawa-Singer M, Foerster SB, et al. Seizing the moment: California's opportunity to prevent nutrition-related health disparities in low-income Asian American population. *Cancer.* 2005;104(12 Suppl):2962-2968.

4. Park SY, Paik HY, Skinner JD, Ok SW, Spindler AA. Mothers' acculturation and eating behaviors of Korean American families in California. *J Nutr Educ Behav.* 2003;35(3):142-147.

5. Franzen L, Smith C. Food system access, shopping behavior, and influences on purchasing groceries in adult Hmong living in Minnesota. *Am J Health Promot.* 2010;24(6):396-409.

6. Diep CS, Leung R, Thompson DI, Gor BJ, Baranowski T. Culture and Diet Among Chinese American Children Aged 9-13 Years: A Qualitative Study. *J Nutr Educ Behav.* 2017;49(4):275-284.e271.

7. National Academies of Sciences E, and Medicine. *Review of WIC Food Packages: Improving Balance and Choice: Final Report.* 2017.

8. WIC Food List. 2016.

9. *Oregon WIC Minimum Required Stock.* 2016.

10. Whaley SE, Ritchie LD, Spector P, Gomez J. Revised WIC food package improves diets of WIC families. *J Nutr Educ Behav.* 2012;44(3):204-209.

11. Oregon WIC TWIST.

12. *Breastfeeding Report Card.* Center for Disease Control and Prevention; 2016.

13. Pediatric Nutrition Surveillance Oregon. In: CDC, ed2011.

14. Wojcicki JM, Gugig R, Tran C, Kathiravan S, Holbrook K, Heyman MB. Early exclusive breastfeeding and maternal attitudes towards infant feeding in a population of new mothers in San Francisco, California. *Breastfeeding medicine : the official journal of the Academy of Breastfeeding Medicine.* 2010;5(1):9-15.

15. Jones KM, Power ML, Queenan JT, Schulkin J. Racial and ethnic disparities in breastfeeding. *Breastfeeding medicine : the official journal of the Academy of Breastfeeding Medicine.* 2015;10(4):186-196.

16. Mistry Y, Freedman M, Sweeney K, Hollenbeck C. Infant-feeding practices of low-income Vietnamese American women. *Journal of human lactation : official journal of International Lactation Consultant Association.* 2008;24(4):406-414.

17. Serdula MK, Cairns KA, Williamson DF, Fuller M, Brown JE. Correlates of breast-feeding in a low-income population of whites, blacks, and southeast Asians. *Journal of the American Dietetic Association.* 1991;91(1):41-45.

18. Sheehan A, Schmied V, Barclay L. Exploring the process of women's infant feeding decisions in the early postbirth period. *Qualitative health research.* 2013;23(7):989-998.

19. Fischer TP, Olson BH. A qualitative study to understand cultural factors affecting a mother's decision to breast or formula feed. *Journal of human lactation : official journal of International Lactation Consultant Association.* 2014;30(2):209-216.

20. Tenfelde S, Finnegan L, Hill PD. Predictors of breastfeeding exclusivity in a WIC sample. *Journal of obstetric, gynecologic, and neonatal nursing : JOGNN.* 2011;40(2):179-189.

21. Oniwon O, Tender JA, He J, Voorhees E, Moon RY. Reasons for Infant Feeding Decisions in Low-Income Families in Washington, DC. *Journal of human lactation : official journal of International Lactation Consultant Association.* 2016;32(4):704-710.

22. Raven JH, Chen Q, Tolhurst RJ, Garner P. Traditional beliefs and practices in the postpartum period in Fujian Province, China: a qualitative study. *BMC pregnancy and childbirth.* 2007;7:8.

23. Donaldson H, Kratzer J, Okutoro-Ketter S, Tung P. Breastfeeding among Chinese immigrants in the United States. *Journal of midwifery & women's health.* 2010;55(3):277-281.

24. Lee A, Brann L. Influence of Cultural Beliefs on Infant Feeding, Postpartum and Childcare Practices among Chinese-American Mothers in New York City. *Journal of community health.* 2015;40(3):476-483.

25. Elter PT, Kennedy HP, Chesla CA, Yimyam S. Spiritual Healing Practices Among Rural Postpartum Thai Women. *Journal of transcultural nursing : official journal of the Transcultural Nursing Society.* 2016;27(3):249-255.

26. Chen LW, Low YL, Fok D, et al. Dietary changes during pregnancy and the postpartum period in Singaporean Chinese, Malay and Indian women: the GUSTO birth cohort study. *Public health nutrition.* 2014;17(9):1930-1938.

27. Galvin S, Grossman X, Feldman-Winter L, Chaudhuri J, Merewood A. A practical intervention to increase breastfeeding initiation among Cambodian women in the US. *Maternal and child health journal.* 2008;12(4):545-547.

28. Raman S, Nicholls R, Ritchie J, Razee H, Shafiee S. Eating soup with nails of pig: thematic synthesis of the qualitative literature on cultural practices and beliefs influencing perinatal nutrition in low and middle income countries. *BMC pregnancy and childbirth.* 2016;16(1):192.

29. Hennink MM, Kaiser BN, Marconi VC. Code Saturation Versus Meaning Saturation: How Many Interviews Are Enough? *Qualitative health research.* 2017;27(4):591-608.

30. Malterud K, Siersma VD, Guassora AD. Sample Size in Qualitative Interview Studies: Guided by Information Power. *Qualitative health research.* 2015.

31. Charmaz K. *Constructing Grounded Theory: A Practical Guide Through Qualitative Analysis.* 2006.

32. Morse JM. Analytic Strategies and Sample Size. *Qualitative health research.* 2015;25(10):1317-1318.

33. Starks H, Trinidad SB. Choose your method: a comparison of phenomenology, discourse analysis, and grounded theory. *Qualitative health research.* 2007;17(10):1372-1380.

34. Hoeffel EM, Rastogi S, Kim MO, Shahid H. *The Asian Population: 2010.* U.S. Department of Commerce Economics and Statistics Administration U.S. CENSUS BUREAU; 2012.

35. Krueger RA, Casey MA. *Focus Groups: A Practical Guide for Applied Research.* SAGE Publications; 2000.

36. Krueger RA. Designing and Conducting Focus Group Interviews. 2002.

37. Lee J, Ramakrishnan K, Wong J. Accurately Counting Asian Americans Is a Civil Rights Issue. *The ANNALS of the American Academy of Political and Social Science.* 2018;677(1):191-202.

APPENDIX A: Focus Group Script

Hi, my name is Crystal. I am a graduate student at OHSU and one of the researchers for this study. Thank you for coming in today and being part of this project. I am excited to hear what you have to say. I will be asking different questions and there are no right or wrong answers to my questions. I will be recording this session so that I can focus on our conversations today and not worry about taking notes. Only researchers for this project or myself will ever listen to the recordings or read the notes, and none of your comments will be connected to your names. Some of the questions may feel more personal than others, but please share as much or as little as you want. Please let me know if you do not want to answer a question. The things said in this room today will not be repeated by any of the researchers. With that said, I'd like to ask all of you not to share information about others in this group with anyone outside of today's discussion. I would also like to ask you all to remain respectful of each other's opinions.

If you feel like stopping at any time, please let me know. Once we are done with this discussion session in an hour, I will give you a $15 gift card.

(Pause for at least 10 seconds before proceeding.)

1. To start, please share your first name, how many children you have and their ages, and describe one meal makes everyone in your house happy.
2. What is one meal that's been passed down in your family that your kids like? How often do you make this meal?
3. What is your favorite American meal? How often do you make it?
4. When you think about making meals at home, would you say you are 1) the head chef, 2) a helper in the kitchen, or 3) someone who only eats the meal?
5. What are the 5 essential food items that you pick up every month as part of your regular grocery shopping? What makes them your key choices?
6. Which grocery stores do you usually go to when you're buying food for the family?
7. (Have a line-up of WIC food items. Gesture to them.) Of these food items, which of these do you always buy? Which of them do you not buy as often? Which one do you never buy?
8. Imagine that a friend or family member who always wants to eat healthy is coming to your house for dinner. What would you serve them?
   Follow up question:
    a. What makes you choose that meal?
    b. What would you definitely not serve to this friend or family member since they are worried about their health?
9. When I was growing up, my mom always talked about hot and cold foods. She doesn't mean just the temperature of the food, though. It's more about what the food does to our bodies. For example, whenever I don't feel very good, she would add

ginger to my food. She always says that ginger is a hot food so it will help me get better faster when I'm sick. She tells me not to eat watermelon when I'm sick because it's a cold food and will make me feel worse. Has anyone else heard anything like that?

Follow-up:

a. What foods do you think of as being hot or cold?

10. If you had a relative or a friend who just gave birth, what foods would you recommend to help her recover?

    Follow up questions:

    a. What makes you choose these foods?

11. We're going to change topics and talk about you and your kids now. When you were pregnant, who do you remember giving you advice about feeding your baby? What did they tell you?

    Prompt:

    a. You may have gotten advice from your doctor or nurse, but what about family or friends?

12. Let's think back to when your baby was born. Before he or she was born, how were you planning on feeding your baby? Were you thinking about only breastfeeding, only using baby formula, or using both? Why did you choose this?

    Follow up questions:

    a. What did you actually end up doing?
    b. Why was what you did different from what you originally planned?
    c. Was there anything that would have helped you breastfeed for longer?

13. One of the recommendations worldwide is to exclusively breastfeed for 6 months. That means that your baby would only drink breast milk with no formula or other foods for 6 months. How do you relate to this goal?

    Follow-up question:

    a. What made you choose your answer?

14. One of the things I'm interested in learning more about is why the breastfeeding rates for Asians using Oregon WIC are lower than for other groups. I am curious what your personal opinions are about why this might be true?
15. After your baby was born, a lot of people probably came to visit or help you. Who was helpful and who was not as helpful? What did the helpful people do for you?
16. Thinking over the different things we talked about today, what are the most important things you want me to know about your experiences with feeding your baby and choosing foods for your family? Is there anything else you'd like to share?

Thank you for taking the time to come to this focus group, I appreciate all of the thoughts you've shared today.

APPENDIX B: Consent Form

State of Oregon WIC Program

Consent to Join a Research Study

The State of Oregon WIC program is doing a study to learn how Asian moms make food choices for their familes and feed their babies. What we find can help WIC programs give better advice to Asian WIC moms.

If you want to be in the study, you will be part of a group to talk about:

- What kinds of foods you eat
- How you choose what to feed your family
- Your experiences with feeding your baby
- Who gave you advice about feeding your baby/children

The session will last about an hour and will be audio-taped.

It is very unlikely that joining this study would harm you. Some questions might remind you of when you had to make hard choices. There is a small risk for loss of privacy if a researcher does not follow the rules about protecting your privacy. Everyone helping with the study is trained to keep your information private.

When the project is done, we will write a report about what we talked about. We will not use your name. After that, the recordings will be erased.

You will be given a $15.00 grocery gift card for helping. You can change your mind about this at any time. If you decide to stop, you will still get WIC benefits. Your help in this study will help the WIC Program learn how to support Asian mothers better.

If you have any questions about the study, please call Julie Reeder at (971) 673-0051. If you have questions about your rights when you are part of a research study, call Alayna Nest, at (971) 673-1221.

If you want to be a part of this study, please fill out the form below.

Thank you!

I agree to be a part of this study. I have had my questions answered.

Date: ______________________

Your Signature: ______________________ WIC ID #: _______________

Print Name: ______________________ _______________

OFFICE USE ONLY:

If you need this form in large print or a different format,
please call (971) 673-0040.
WIC is an equal opportunity program and employer.

APPENDIX C: Explanation of Project for WIC Staff

Discussion Groups for Asian WIC Participants

We would like to host a discussion group with Asian WIC participants. Why this population?

- There are currently very few studies of Asians and their perceptions of breastfeeding, nutrition, and health overall. We want to know what influences their decisions when it comes to infant feeding and family meals, especially because Asians are a growing population in Oregon.
- Asian WIC participants in Oregon currently have the lowest breastfeeding rates compared to women of other race groups who participate in Oregon WIC.
- Oregon WIC currently serves over 3,000 Asian participants, and this project will help us understand how to better serve them!

Please help recruit!
Please ask mothers who self-identify as Asian and who participated in WIC for at least one month during their pregnancy if they would be willing to participate in a discussion group. This discussion group will help us better understand the experiences of Asian mothers. They will be asked about their family dynamics, decision-making processes, and cultural beliefs about infant feeding and family meals.

Please help us by asking qualified participants you see in your office if they would like to participate. Participants can count the discussion group session as a class. They will also be offered a $15 gift card to a grocery store at the end of the 1-hour session.

Who qualifies?

- Asian mothers with at least 1 child (Please check in TWIST to determine if a mother identifies as Asian.)
- Age 18+ years
- Used Oregon WIC for at least 1 month during her pregnancy
- Speaks English

If they're interested:
Please email their WIC ID # to Julie Reeder (julie.a.reeder@dhsoha.state.or.us). Let them know that they will be contacted by a researcher for more information.

Questions?
Julie Reeder at WIC is an investigator on this study. Any questions can be directed to Julie or Crystal Tsai, a graduate student at OHSU. If you need to reach Crystal, please email her at tsacr@ohsu.edu.

APPENDIX D: Recruitment Flyer

Do you identify as Asian?
Did you use WIC while you were pregnant?

Take part in a fun focus group and receive a $15 grocery store gift card!
The group will also count as a class for WIC!

Oregon WIC and Oregon Health & Science University (OHSU) are doing a study to understand how WIC can better serve Asian families. We're interested in hearing about how you fed your babies when they were first born, what your family likes to eat, and why.

The focus group will last about 1 hour and will be held in this WIC office. You'll be given a $15 grocery gift card for your time.

Can you help by coming to this focus group?
If so, or if you'd like more information, please let WIC office staff know!

Focus group will be held:
[*Date*]
[*WIC Agency*]

If you have questions, please call Julie Reeder at (971) 673-0051.
Public Health Division IRB # 17-17; approval expires July 18, 2018